

In the Claims:

1. (Currently Amended) A method for **large scale, continuous** production of large quantities of an individual Class I MHC molecule, comprising the steps of:

isolating ~~MHC allele mRNA~~ **total RNA** from a source and reverse transcribing the mRNA **present in the total RNA** to form MHC allelic cDNA, **wherein the total RNA contains mRNA for at least one MHC Class I allele and reverse transcribing the mRNA forms a cDNA encoding a desired MHC Class I allele;**

~~amplifying the MHC allelic cDNA~~ **creating a truncated PCR product encoding the desired MHC Class I allele** by PCR **amplification of the cDNA encoding the desired MHC Class I allele wherein the PCR product does not encode the** ~~using a pair of flanking oligonucleotide primers designed to amplify a segment of DNA that encodes an individual Class I MHC gene and truncates said Class I MHC gene by removal of those regions that encode transmembrane and cytoplasmic domains of said~~ **the desired** class I MHC molecules, thereby producing a PCR product that encodes an individual, soluble Class I MHC molecule;

cloning the PCR product into a mammalian expression vector to create a construct;

electroporating or transfecting the construct into a suitable host cell; and

inoculating a hollow fiber **bioreactor** unit with the host cell containing the construct **for large scale continuous production of the soluble individual Class I MHC molecule** such that large quantities of the soluble individual Class I MHC molecule are produced.

2. (Previously Amended) The method of claim 1 wherein fresh media, oxygen and glucose are fed into said hollow fiber bioreactor unit at a rate to maintain optimum cell growth and to maintain harvest rates at a desired level of soluble individual Class I MHC molecules.

3-4. (Canceled)

5. (Currently Amended) The method of claim 1 further comprising the step of harvesting the soluble individual Class I MHC molecules from the hollow fiber bioreactor unit **by a continuous harvest method**.

6. (Original) The method of claim 1 wherein, in the step of electroporating or transfecting the construct into a host cell, the host cell **is a human host cell that** lacks expression of Class I MHC molecules.

7. (Original) The method of claim 1 wherein, in the step of cloning the PCR product into a mammalian expression vector, the mammalian expression vector contains a promoter that facilitates expression of the PCR product.

8. (Currently Amended) The method of claim 1 wherein, in the step of isolating ~~MHC allele mRNA~~ **total RNA** from a source, the source is selected from the group consisting of a ~~mammalian DNA specimen~~ **virus transformed cell line** and an immortalized cell line.

9. (New) The method of claim 1 wherein, in the step of creating a truncated PCR product encoding the desired MHC Class I allele, one of the primers is designed to add a tail to the individual Class I MHC molecule expressed from the PCR product.

10. (New) The method of claim 9 further comprising the steps of harvesting the soluble individual Class I MHC molecules from the hollow fiber bioreactor unit by a continuous harvest method and purifying the soluble individual Class I MHC molecules using the tail attached to the soluble individual Class I MHC molecules.

11. (New) A method for large scale, continuous production of large quantities of an individual Class I MHC molecule, comprising the steps of:

isolating total RNA from a source and reverse transcribing mRNA present in the total RNA to form cDNA, wherein the total RNA contains mRNA for at least one MHC Class I allele and reverse transcribing the mRNA forms a cDNA encoding a desired MHC Class I allele;

creating a truncated PCR product encoding the desired MHC Class I allele by PCR amplification of the cDNA encoding the desired MHC Class I allele wherein the PCR product does not encode the transmembrane and cytoplasmic domains of the desired MHC Class I molecules, thereby producing a PCR product that encodes an individual, soluble Class I MHC molecule;

cloning the PCR product into a mammalian expression vector to create a construct;

electroporating or transfecting the construct into a suitable host cell; and

inoculating a hollow fiber bioreactor unit with the host cell containing the construct for large scale continuous production of the soluble individual Class I MHC molecule, wherein fresh media, oxygen and glucose are fed into said hollow fiber bioreactor unit at a rate to maintain optimum cell growth and to maintain harvest rates at a desired level of soluble individual Class I MHC molecules such that

large quantities of the soluble individual Class I MHC molecule are produced; and
harvesting the soluble individual Class I MHC molecules from the hollow fiber bioreactor unit by a continuous harvest method.

12. (New) A method for large scale, continuous production of large quantities of an individual Class I MHC molecule, comprising the steps of:

isolating total RNA from a source and reverse transcribing mRNA present in the total RNA to form cDNA, wherein the total RNA contains mRNA for at least one MHC Class I allele and reverse transcribing the mRNA forms a cDNA encoding a desired MHC Class I allele;
creating a truncated PCR product encoding the desired MHC Class I allele by PCR amplification wherein the PCR product does not encode the transmembrane and cytoplasmic domains of the desired MHC Class I molecules, thereby producing a PCR product that encodes an individual, soluble Class I MHC molecule, wherein one of the primers utilized in the PCR amplification is designed to add a tail to the individual, soluble Class I MHC molecule expressed from the PCR product;
cloning the PCR product into a mammalian expression vector to create a construct;

electroporating or transfecting the construct into a suitable host cell;
inoculating a hollow fiber bioreactor unit with the host cell containing the
construct for large scale continuous production of the soluble
individual Class I MHC molecule, wherein fresh media, oxygen and
glucose are fed into said hollow fiber bioreactor unit at a rate to
maintain optimum cell growth and to maintain harvest rates at a
desired level of soluble individual Class I MHC molecules such that
large quantities of the soluble individual Class I MHC molecule are
produced; and
harvesting the soluble individual Class I MHC molecules from the hollow
fiber bioreactor unit by a continuous harvest method.

13. (New) The method of claim 12 further comprising the step of purifying the
soluble individual Class I MHC molecules using the tail attached to the soluble
individual Class I MHC molecules.

14. (New) A method for production of an individual Class I MHC molecule,
comprising the steps of:

isolating total RNA from a source and reverse transcribing mRNA present
in the total RNA to form cDNA, wherein the total RNA contains

mRNA for at least one MHC Class I allele and reverse transcribing the mRNA forms a cDNA encoding a desired MHC Class I allele; creating a truncated PCR product encoding the desired MHC Class I allele by PCR amplification of the cDNA encoding the desired MHC Class I allele wherein the PCR product does not encode the transmembrane and cytoplasmic domains of the desired class I MHC molecules, thereby producing a PCR product that encodes an individual, soluble Class I MHC molecule; cloning the PCR product into a mammalian expression vector to create a construct; electroporating or transfecting the construct into a suitable host cell; and inoculating a hollow fiber bioreactor unit with the host cell containing the construct for production of the soluble individual Class I MHC molecule.